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ABSTRACT

An overview of educational reforms during the 1980s (1978-88) and their effects is presented for use by policy makers, practitioners, and interested citizens. The first section of this report, called "The Reforms of the 1980s", is based largely on a 50-state survey and a research report, both commissioned by the Educational Testing Service Policy Information Center. The second and third sections of this report, "Progress toward Excellence" and "Progress toward Equality," draw heavily on statistics and assessments carried out or funded by the National Center of Education Statistics. The "education reform decade" is most identified with state-level reform laws and policy changes that were initiated and carried out by governors and state legislatures. The decade is associated with what came to be called the "excellence movement", a shorthand reference to the reforms called for in the 1983 report of the National Commission on Excellence in Education entitled "A Nation at Risk." Since a great deal of state action was well under way by that time, particularly in testing, the reform decade is dated from 1978 for the purposes of this review. The following reform policy topics are addressed: high school graduation requirements; student testing; accountability; teacher standards; student and school district standards; and policy changes at the school level. Data on educational improvement are reviewed in the areas of reading, mathematics, science, civics, writing, student retention, and student effort. Topics associated with equal education include achievement gaps in reading, mathematics, and science as well as gaps in student retention and gender differences. Thirty-five figures are included. (TJH)

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POLICY INFORMATION REPORT

THE EDUCATION REFORM DECADE

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Office of Educational Research and Improvement
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Preface

The 1980s was a time when education could be front page news, when education became the business of business, when state legislatures and "education" governors set out to legislate "excellence" (the most used education term of the decade). The decade ended with an "education" President who called the nation's governors together for an "Education Summit" meeting at the University of Virginia in Charlottesville, which evoked the pleas for an educated citizenry by that university's founder.

In contrast to that grand effort, this Policy Information Report has a very modest goal. It is to sum up what happened during the decade, using the available facts and statistics from the most reliable sources. The reasons for what happened, the causes, and an assessment of the significance of these happenings will be much debated in the years to come. We aspire, in this document, only to provide facts and assessments that can be used by those attempting to make such judgments. Most particularly, we tried to do this for the many policy makers, educational practitioners, and interested citizens who do not read the thick statistical reports by the government, or the highly technical studies of the research community.

Paul E. Barton
Director
Policy Information Center

Acknowledgments

The first section of this report is based largely on a 50-state survey commissioned by the Policy Information Center and carried out at ETS by Richard J. Coley and Margaret E. Goertz. The complete results of the study are available in *Educational Standards in the 50 States: 1990*, published as a Research Report (RR-90-15) by Educational Testing Service. This first section also draws on another report commissioned by the Center, *Policy Changes and School Climate: An Analysis of the NAEP School Questionnaire (1987-1988)*, by Lawrence Bernstein, also available as an ETS Research Report (RR-90-3). See Reference Notes for information for ordering these two ETS Research Reports.

We thank our external reviewers: Susan Fuhrman, the Center for Policy Research in Education; Reynaldo Macias, University of California; and Michael Nettles, University of Tennessee. And we also thank our reviewers at Educational Testing Service: Beatriz Chu Clewell, Margaret E. Goertz, Lynn Jenkins, and Stephen Koffler.

The second and third sections draw heavily on an increasingly comprehensive set of statistics and assessments carried out or funded by the National Center for Educational Statistics (as is apparent from the "Reference Notes" at the end of this report). Most particularly, we depended on the reports of the National Assessment of Educational Progress, produced by ETS for NCES.

Richard J. Coley assisted both in the drafting and the editing, and prepared the charts and graphs. Carla Meadows provided word processing services.

In the ETS Office of Publications, Carol G. Carlson edited the manuscript, Ric Bruce was the designer, and Sid Goldsmith was production coordinator.

Opportunity to learn, time on task, testing, length of the school day and year, discipline, attendance, homework, standards for promotion and graduation, qualifications and characteristics of teachers — these are all among the traditional components of education. All were subjected to scrutiny and change during the 1980s. Hardly an educational stone was left unturned, and as a result, students in this decade faced increasingly more demanding classrooms than those in the prior decade.

The first part of this report is a summary of these patterns of change. While it details the decade of the 1980s, reform movements seldom have such neat time frames, and the main focus of this report will be the period from 1978 to 1988. The reform period's beginnings are often identified with the issuance of the report, *A Nation at Risk*, in 1983, but the concern about declining educational quality and the development of the political will to act were already gathering steam in the last half of the 1970s. At that time, every report on results of the SAT and ACT college admissions tests showed a decline in scores and became front page news. In 1978, a blue ribbon panel appointed by the College Board issued what might be considered the first of the education reform reports, called *On Further Examination: The Report of the Advisory Panel on the SAT Score Decline*.

By about 1988 or so, evaluations of the educational situation were changing once more. The state-led movement, regulatory and top-down, appeared to have completed its agenda, yet widespread dissatisfaction with education remained. The new term for reform was "restructuring," and with it came a call for a fundamental break with the organizational, governmental, and pedagogical practices of the past. This new call included the proposition that change should start from the bottom, that there should be room to exercise discretion at the school building level, and that professionalism should be restored to the teaching profession.

The second section, "Progress Toward Excellence," considers whether progress has been made toward improved quality in education. This section reviews changes in achievement levels, in several indicators of student effort, and in success in retaining students in school. This reporting owes much to improvements in the National Assessment of Educational Progress, both in the reach of its assessments and in the reporting of its data; the willingness to measure progress more effectively is itself a measure of a greater will to improve education. There was also significant improvement in the reporting of dropout rates by the National Center for Education Statistics.

Of course, few will be — or should be — entirely comfortable with using a handful of statistics that characterize the nation as a whole to make inferences about a variety of subpopulations and events. In such a diverse nation, we can be reasonably certain that change unfolds in different ways, at different speeds, and with different results, in the many towns, cities, and rural areas that constitute the nation. These statistics are merely averages that, as they sum up a nation, also subtract from an accurate picture of what is happening in any *one* place. But at least we are now able to characterize the nation as a whole; it would not have been possible to compare the 1970s with the previous decade in any way approaching what we can do today.

The third section, "Progress Toward Equality," asks whether there was progress in this decade toward equality in the educational enterprise. Did we reduce the gaps in achievement between minority and majority populations, and between females and males? There was much debate in the 1980s about whether the excellence movement was addressing the goals of increased access and equality, and some concern as to whether higher standards would result in lower-achieving populations leaving the schools. Thoughtful observers saw

that the twin goals of excellence and equality did not necessarily conflict. It is appropriate to examine who achieved as well as how many.

It should be made clear that this report will not attempt to trace the causes of whatever changes (or lack of them) are described in the second and third sections. This will be possible only at a later time, if at all. Many of the changes that occurred in student achievement in the 1980s likely trace back to educational events in the 1970s, such as the impact of Headstart in the preschool years. Many of the new policies and practices of the 1980s will not have an effect until well into the 1990s or beyond — higher standards for entry into the teaching profession, for example.

This is an information report, designed to inform policy making. It does not attempt to prescribe what should be done next in U.S. education. It does assume, however, that we must agree on where we are now, and where we have come from, as policies are made for the decade of the 1990s.

While this report is an attempt to sum up the happenings of the decade ending, it represents one picture of the educational scene as the new decade begins. The President and the governors have announced new National Goals for Education, to be reached by the year 2000. They are ambitious goals. A comparison of where this decade ends, with where we intend to be at the beginning of the next decade, is bound to be sobering. We did have some forward movement in the decade of the 1980s, although there is a lot of room for disagreement on how much the improvement amounted to, and what it may portend for another concerted effort at progress over the next ten years.

THE REFORMS OF THE 1980s

The principal reforms associated with the decade of the 1980s were led by governors and state legislatures, often with strong business backing. It was a period when elected officials took charge in an educational system that had much earlier been professionalized. Margaret E. Goertz, in *Education Politics for the New Century*, summed it up as follows: "Unlike the 1960s, when education politics was the province of broad based education interest groups (state education departments, schools of education, superintendents, administrators and teachers), the 1980s reform was dominated by business leaders and elected officials." The reform effort extended down to districts and individual schools, where measures were taken beyond those spelled out by state laws and regulations.

We report here first on the extensive state-led initiatives, and then on what school principals report they did to change educational policy and practice, both in implementing state initiatives and going beyond them. A summary of these changes is provided in Figure 1.

Figure 1
Law and Policy Changes in the 1980s

State Level (1980-1990)	
High school graduation requirements	*42 states raised standards*
Student testing	*Momentum from '70s carried forward; 47 statewide programs by 1990*
Accountability	*Widespread adoption of measurement and indicator systems; by 1990, 23 states go beyond test scores and use an integrated set of indicators*
Teacher Standards	*Sweeping changes; particularly in teacher testing, from a handful of states in 1980 to 39 in 1990 that require passing a test to enter teacher education or begin teaching*
School Level (1984-1988)	
Stricter attendance standards	*73% of high schools*
Set academic requirements for athletics and extra-curricular activities	*70% of high schools*
Stricter conduct standards	*70% of high schools*
Longer school day	*40% of high schools*
More homework	*27% of high schools*
Higher teacher pay	*23% of high schools*
Longer school year	*17% of high schools*

HIGH SCHOOL GRADUATION REQUIREMENTS

In 1983, the National Commission on Excellence in Education concluded in *A Nation at Risk*:

> **Secondary school curricula have been homogenized, diluted, and diffused to the point that they no longer have a central purpose. In effect, we have a cafeteria-style curriculum in which the appetizers and desserts can easily be mistaken for the main courses....this curricular smorgasbord, combined with extensive student choice, explains a great deal about where we find ourselves today.**

One of the report's principal recommendations was that high school students take more courses in the "New Basics." Specifically, students should take:

- Four years of English
- Three years of mathematics
- Three years of science
- Three years of social studies
- One-half year of computer science

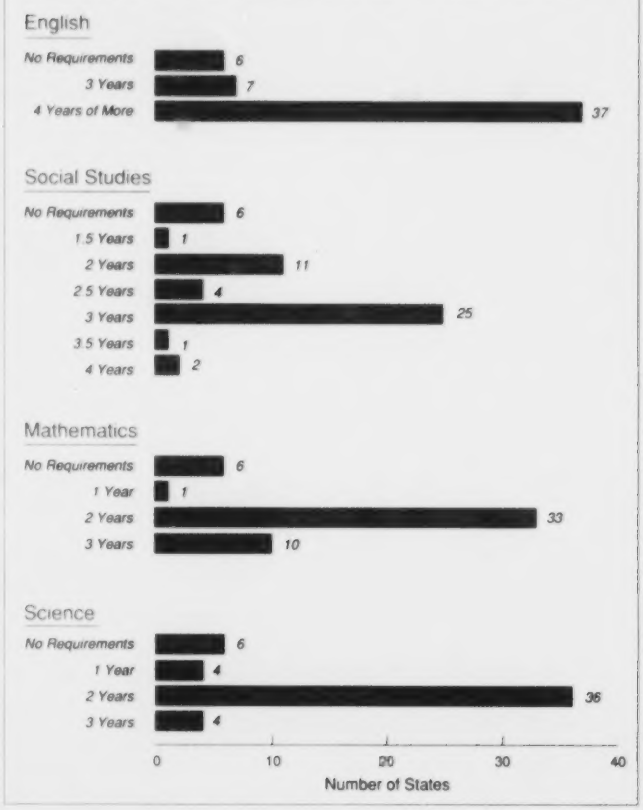
By the end of the decade 42 states had raised standards for the number and type of courses required for high school graduation.* Yet, the requirements of many states still fall short of the National Commission's recommendations.

- Thirty-seven states require four or more years of English.
- Ten states require three years of mathematics.
- Four states require three years of science.
- Three states require two years each of mathematics and science, and a third year of either subject.
- Twenty-eight states require three or more years of social studies.

Figure 2 shows that most states require four years of English, two to three years of social studies, and two years each of mathematics and science. In addition, most states require one to two years of health and physical education, and about half of the states require one year of another subject, generally a fine or practical arts course. Seven states require students to take one- or two-semester courses in career development or vocational education. In eight states, high school graduates must have taken courses or demonstrated proficiency in computers; five more states include computer science courses in the college preparatory curriculum requirements.

As the decade closed, a growing number of states were establishing more rigorous curriculum requirements for their college-bound students. New York has offered a "Regents Diploma" for decades, requiring students to take three years of a foreign language and to pass subject matter tests, in addition to the regular course work requirements. Seven more states offer "advanced" or "college preparatory" diplomas (Alabama, Indiana, Maryland, Missouri, Rhode Island, Texas and Virginia), and another four states have defined course work requirements for their college preparatory programs (California, Delaware, Kansas, and Tennessee).

Figure 2
State High School Graduation Requirements, 1990



STUDENT TESTING

Attention in the 1970s focused on declines in scores on the SAT and ACT tests, as well as on other standardized tests. These declines were particularly sharp during the first half of the decade, and for the SAT, also in the period from 1972 to 1975. The clear sense that educational quality was deteriorating was accompanied by a desire to "return to basics" and impose a standard of performance. Writing in 1982 in *Measuring the Quality of Education*, Willard Wirtz and Archie Lapointe reported that,

> **Thirty-nine states adopted, in many instances by legislation,**

*Five states do not impose work requirements for high school graduation.

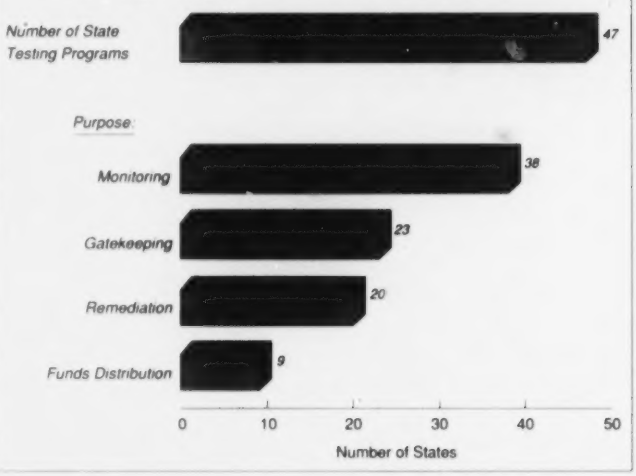
"minimum competency" testing programs. Standardized tests were either developed by state education agencies or obtained from commercial publishers. In many cases specific scores on the examinations were set as marking the lowest levels of competency that could be considered acceptable.

This large-scale testing was the 1970s' educational contribution to the reform movement of the 1980s — which was to be about "excellence," not "lowest levels of competencies." In 1983, the report of the National Commission on Excellence in Education proclaimed that "Our goal must be to develop the talents of all to their fullest." It devoted just one paragraph to standardized testing, emphasizing, particularly, assessment at the transition from high school to college. Its concentration was on the individual: to certify credentials, identify the need for remedial intervention, and identify the opportunity for advanced or accelerated work. Nothing was said about large-scale testing for accountability.

Yet, the momentum for testing carried into the new decade with considerable force. Between 1982-83 and 1984-85 there were significant increases and changes in testing.

- Ten states established new statewide testing programs.
- Twelve states expanded minimum competency testing programs to include more grades and/or more subject areas.
- Ten states embarked on "promotion gate" testing or created tests to be used as a high school graduation requirement.

Figure 3
State Testing Programs and Purposes, 1990



The pace of state lawmaking in education was slowing in general by 1985, but testing continued to receive the attention of governors and legislators. Two more states initiated statewide programs between 1984-85 and 1986-87. Eight added new grade levels to their existing testing programs. Two added additional subject areas. Two more expanded their programs to include all students in the grades tested, rather than samples of students. Finally, between 1986-87 and 1989-90, three more states adopted testing programs. By 1990, 47 states had testing programs. The purposes of these programs included the following:

- Monitoring student, school, and/or school district performance
- Certifying students for grade promotion or high school graduation
- Identifying students in need of remediation
- Allocating state compensatory education aid

The accountability purpose was the most frequent, in 38 states*; 23 states used tests for promotion or graduation, 20 to identify students in need of remediation and nine for allocating state compensatory education aid (see Figure 3).

One new testing program, the Trial State Assessment Program, was initiated by the U.S. Congress in 1990 as part of the National Assessment of Educational Progress. In 1990, 37 states, two territories, and the District of Columbia participated in an assessment of 8th grade mathematics. In 1992, NAEP will assess mathematics at grades 4 and 8, and reading at grade 4, within states and territories that choose to participate. The proposal to assess states was made by a blue-ribbon panel and as a result Congress authorized a trial program that will be evaluated after the 1992 assessment.

As the last decade was drawing to a close, some resistance to so much testing in the public schools was becoming evident. Although it was expressed in different ways, much of the criticism focused on using multiple-choice tests as the sole method of determining achievement, and on the effects of such tests on classroom teaching practices. As the 1990s began, a handful of states were experimenting with new forms of tests that measured actual student performance, or that strived to be "authentic."

A statement about the National Goals for Education, issued by President Bush and the nation's governors early in 1990, heightened interest in the

**The count of states that "monitor performance" is from the 1990 report of Richard J. Coley and Margaret E. Goertz. A 1988 report by the U.S. Department of Education's Office of Educational Research and Improvement, Creating Responsible and Responsive Accountability Systems, identified the same number of states that had data that could be used for "comparisons."*

use of tests to measure progress towards these goals. The statement said the nation needs "a bipartisan group to oversee the process of determining and developing appropriate measurements and reporting on the progress toward meeting the goals." The direction that testing will take during the course of the decade is not clear at its outset, but we enter the decade with more testing in the schools than the nation has ever experienced.

ACCOUNTABILITY

As educational reforms were implemented in the 1980s, two questions arose: What differences are they making, and how will we know? According to the National Conference of State Legislatures, legislative committee chairs in 31 states identified accountability as a top priority for 1989. To achieve accountability, the states needed a set of achievement tests and data about school characteristics used to create "indicator" systems to track progress and spot underperforming schools and school districts. While all of the states collect information on schooling, the systems they use vary considerably. In *Creating Responsible and Responsive Accountability Systems*, the Office of Educational Research and Improvement of the U.S. Department of Education has provided a comprehensive summary of state information systems on schooling. According to the report:

- Most of the systems are operated at the state level.
- Twenty-five states link their systems with direct state-level policies — that is, performance data trigger other state actions aimed at improving education.
- Only 23 states use an integrated set of indicators rather than using only test scores. In many states, accountability rests largely on data provided by achievement tests and minimum competency tests.
- While most of the states collect background data about students and their communities, only 21 states use that data as contextual information to help interpret performance indicators.
- While most of the states make state-level performance data available to the public, only 25 states report school-level summaries of test data to the public.
- Twenty-three states report comparisons of school performance, and 16 more states provide information enabling comparisons to be made.

While these trends reflect general patterns in states' efforts to strengthen educational accountability in the 1980s, the actions of two front-running states may foreshadow the changes in accountability or education indicator systems in the 1990s. California and South Carolina issue school "report cards," compare schools with other schools in the state, include information on school and community context, and either reward or penalize districts for their performance. The accountability systems in both states were implemented to monitor reform legislation, to broaden the criteria by which schools are measured, to increase public support for schools by letting them demonstrate success, and to reward schools for effectiveness.

South Carolina's school report cards provide direct comparisons for each school in the state in the areas of test results and student and teacher attendance rates. Each school's test results are also compared with schools that are similar with regard to the percentage of students who are eligible for a free lunch (a proxy for socioeconomic status), level of teacher education, locally generated financing, and the percentage of first grade students who meet the state's school readiness standard. The report cards also allow schools to assess their own performance over time using expected performance levels based on a matched longitudinal analysis of the test scores of students in that school. Schools that show greater-than-expected gains in achievement receive monetary rewards; districts that fail to meet state standards are subject to state intervention.

Similarly, California's school report cards provide information on trends in individual school performance, on how a school's performance compares with other schools in the state, and on how a school compares with schools similar in terms of parent education and occupation, percentage of students with limited English proficiency, student mobility, and poverty. The state's extensive list of performance indicators includes scores in achievement, college entrance, and Advanced Placement tests; first year grades of students continuing in the state university system; academic course enrollments; and attendance and dropout rates. The state relaxes the normal review procedure for high-performing schools and provides technical assistance to low-performing schools. The state also publicly recognizes schools with the greatest improvements and publishes lists of the poorest performing schools.

TEACHER STANDARDS

After the states enacted accountability standards, they followed the public concern about teachers. Teacher quality became one of the fastest-moving areas of education reform. New information on the weak background and preparation of beginning teachers and "horror stories" told about poor teachers in the classroom led policy makers to effect sweeping changes in teacher preparation and certification methods. No area was neglected. States enacted policies related to access to teacher education programs, the nature and content of the teacher education curriculum, and standards for certification.

The biggest changes were in teacher testing. As the decade of the 1980s began, only a handful of states — primarily in the Southeast — evaluated prospective teachers in a standardized fashion. Today, 39 states require prospective teachers to pass a test before entering a teacher education program and/or before being certified to teach (see Figure 4), and several states have testing programs in development.

Twenty-one states require some (e.g., those attending state institutions) or all teacher education candidates to pass a test — usually basic skills or college entrance — to enroll in a teacher education program. Fifteen states have established a minimum grade point average requirement and 12 states require both.

Prospective teachers in 36 states must pass a test to become certified to teach. These states vary considerably in the test used, the minimum passing score, and the area(s) tested, e.g., basic skills, general knowledge, professional knowledge, and subject area (see Figure 5). States use different tests to evaluate aspiring teachers and often set different passing scores for the same test.

- Seven states use an internally developed test.

Figure 4
State Teacher Testing Requirements

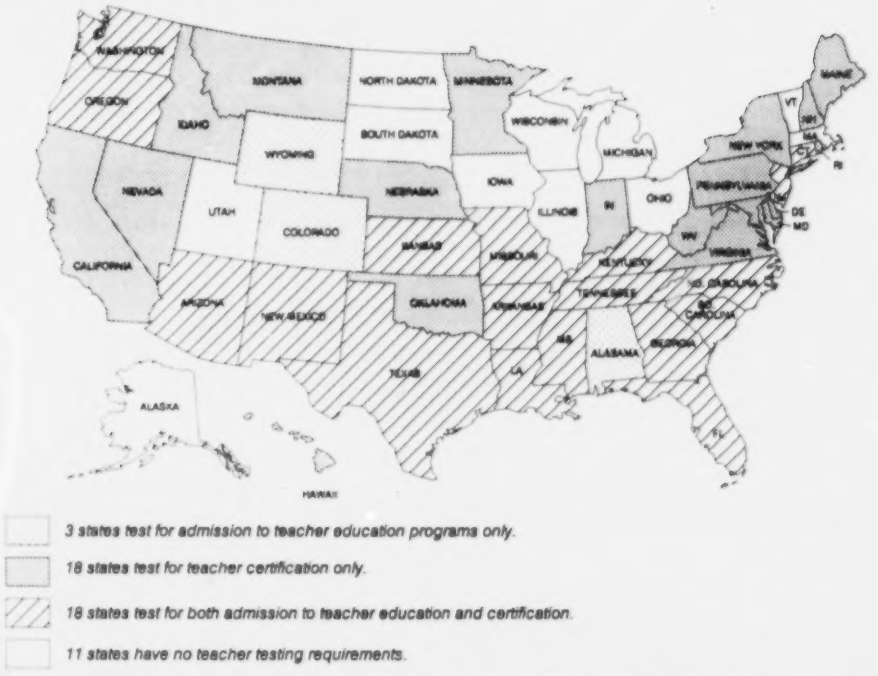
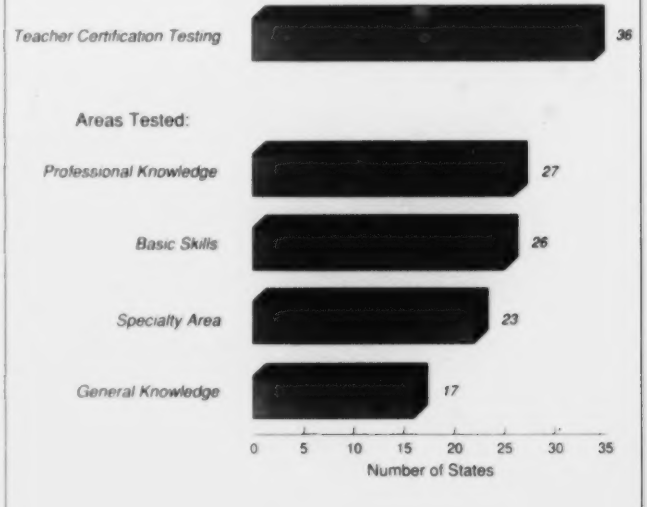


Figure 5
Areas Tested for Teacher Certification, 1990



- Four states use the Pre-Professional Skills Test (PPST).
- Twenty-two states use the National Teacher Examination (NTE) Core Battery.
- Seventeen states use NTE Specialty Area Tests.

Qualifying scores on the national tests vary widely. For example, while one state considers a score of 636 on the NTE Communications Skills Test as acceptable, another state requires a score of 659 (the scale for this test extends from 600 to 695).

The only universal requirement among the states for entry-level teacher certification is the completion of an approved program (in a regular teacher education program or an alternative route to certification). Most states have established multi-level certification systems that consist of entry-level or initial certification for those entering teaching for the first time, and a variety of procedures, such as certification renewal or advanced certification levels, for experienced teachers. Sixteen states also evaluate a beginning teacher's performance in the classroom, or plan to do so, before granting regular certification. While only one state (and none after 1991) grants lifetime certificates to novice teachers, 10 provide such a certificate to teachers holding an advanced certificate. The remaining states require teachers to renew their certificates on a regular basis, usually based on years of experience and further education or training.

Two other trends in the 1980s are noteworthy, and both stem from a perception that teacher training should focus more on subject matter and less on pedagogy. Several states have established "alternative routes" to teacher certification. The idea here is to attract talented individuals to teaching who cannot afford the time and money necessary to complete traditional teacher education programs. In New Jersey, for example, school districts may hire liberal arts graduates who have had no formal, college-based teacher training. These "provisional teachers" must pass an examination in their discipline, undergo a paid, year-long internship at the hiring school district, and receive 200 contact hours of formal instruction in education while they teach. Regular certification is granted upon completion of the program.

The second trend involves the enactment of policies that change the balance of academic and education courses required to complete teacher education programs. In Virginia, for example, arts and science degrees are required for all teachers and professional studies are limited.

One of the major educational developments for the 1990s will be new assessment strategies for teachers. While the paper-and-pencil teacher tests of the last decade have left an indelible mark on the policy landscape, they are likely to give way to innovative methods of assessing the actual work of teachers. As the 1980s drew to a close, a few such efforts were getting under way.

On the national level, the National Board for Professional Teaching Standards was established in 1987 to create a system of voluntary certification for experienced teachers. The board is currently exploring a variety of methods for assessing the skills of teachers, including on-site observations, simulated performance, documentation, essays, interviews, and multiple choice examinations.

Several states are also active in developing new assessments. Connecticut, in addition to requiring clinical assessments of professional knowledge, is currently developing assessment center approaches for evaluating a teacher's subject matter and pedagogical knowledge through the use of semi-structured interviews. The state's design and development of innovative methods of teacher assessment provided a catalyst for establishing the Interstate Consortium for Support and Assessment which is housed with the Council of Chief State School Officers' program of professional development. This consortium includes Connecticut, California, and the Stanford University Teacher Assessment Project as charter members.

Finally, the largest currently used test for teacher certification — the NTE — is being substantially revised. The successor to the NTE will be composed of three stages. Stage I will center on the assessment of enabling or basic skills in mathematics, reading, and writing needed by beginning teachers. Components include a test, a diagnostic skills assessment, instructional modules, and practice tests. Stage II tests will measure prospective teachers' subject matter knowledge, general pedagogy, and to some extent, subject matter pedagogy. Stage III will provide states with products and services enabling them to use performance data to make valid and reliable licensure decisions for beginning teachers.

OTHER STUDENT AND SCHOOL DISTRICT STANDARDS

During the decade of the 1980s, state actions coincided with reform commission recommenda-

tions that students spend more time in school and that the time be spent more efficiently. State standards were imposed regulating the length of the school year and day; ages for compulsory attendance; and policies on homework, attendance, discipline, extracurricular activities, and promotion.

The majority of the states now require that students attend school a minimum of 180 days per year and all the states require at least 175 days. This requirement is a carryover from our agricultural past and contrasts with several other countries in which students attend school between 220 and 240 days a year.

Forty-four of the states specify a minimum amount of time in a school day. In some cases, the minimum includes only instructional time, making comparisons among the states difficult. In general, however, the length of the school day increases as students get older. The minimum school day is less than five hours for children in grades one to three in 13 states, but is less than five hours for secondary students in only three states. Eleven states require children in the primary grades (1-3) to attend school at least six hours, while 19 states require high school students to attend school that long. A few states provide financial incentives for school districts that lengthen their school day beyond the state minimum.

Many states have also extended the ages for compulsory school attendance, and have either mandated kindergarten programs or required local districts to offer them for those wishing to attend. In addition, states have required districts to establish written policies on attendance, discipline, homework, and/or promotion or retention. Finally, several states have required minimum grade point averages for students participating in extracurricular activities or for high school graduation.

POLICY CHANGES AT THE SCHOOL LEVEL

The state-level laws and policies described above may not give a precise picture of the changes that occurred at the level of individual schools, where policy must be implemented. Nor do they tell us what schools did on their own, or in response to district policies, in areas not controlled by or acted upon by the state. In fact, there has been no reliable information on what policy changes took place in the schools.

Beginning in 1983-84, the National Assessment of Educational Progress (NAEP) required a comprehensive school questionnaire to be filled out by the principal or vice principal in each participating school. The sample of schools was representative of all schools in the United States that have 4th, 8th, and 12th grades, the grade levels assessed by NAEP. In the 1988 assessment, the schools were asked about changes they made in policies since the 1984-85 school year, regardless of whether these changes were imposed by the state or the result of school or district policy changes. This timeframe spans the period when states reacted the most strongly to the *Nation at Risk* report of 1983.

Figure 6 shows the percentage of schools at each grade level that reported each type of policy change. For elementary and middle schools, the most pervasive change was in "establishing new consistently enforced codes of student conduct." It was the second most frequent change for high schools. Sixty-three percent of elementary schools

Figure 6
Percentage of Schools Reporting Types of Policy Changes by Grade Level in the Period from 1983-84 to 1987-88

Source: Lawrence Bernstein, "Policy Changes and School Climate: An Analysis of the NAEP School Questionnaire (1987-88)." Princeton, NJ: Educational Testing Service, March 1990.

**Establishment of grade point averages required for eligibility for participation in sports and extracurricular activities*

tightened up on conduct, as did 68 percent of middle schools (and junior high schools) and 70 percent of high schools.* This "return to rigor" was being widely demanded after the perceived laxness of the prior decade.

As part of this reform, schools established a "stricter attendance policy." This was the most frequent change for high schools (73 percent), the second most frequent change for elementary schools (46 percent), and the third-ranking change for middle schools (51 percent).

Also in the top tier of school-level policy changes was the "establishment of grade requirements for participation in athletics or extracurricular activities." Again, this was an effort to achieve more academic rigor among the student body and to increase the focus on learning. This was the second-ranked change for middle schools, involving six out of ten of them. Seventy percent of high schools and 37 percent of elementary schools reported similar changes.

For elementary and middle schools, the fourth-ranking policy change was "implementing competency testing for promotion and graduation;" it was the fifth-ranking change for high schools. Such changes took place in over a third of the schools at each grade level.

From 27 percent to 32 percent of the schools "established a policy of increased homework," from 30 to 40 percent "lengthened the school day," from 22 percent to 27 percent implemented some type of "performance-based compensation system," and from 16 to 18 percent "lengthened the school year."

As can be seen from Figure 6, there is a very large range in the percentage of schools carrying out policy changes in these eight areas, from just 16 percent of elementary schools that lengthened the school year to 73 percent of high schools that established stricter attendance policies. It appears likely from these data and from the data presented earlier on state-level policy change, that much of the policy "action" occurred at the local level. Schools tried to change student behavior with regard to their conduct, their attendance, and maintaining grades as a condition of participating in athletics and extracurricular activities (although some of the changes have come in response to the state-level initiatives or policies). High schools were most likely to have made such policy changes, followed by middle schools and elementary schools.

To determine if policy changes were more common in certain kinds of schools, the frequency of policy changes was compared to several school characteristics: size and type of community, the percent of children in the school that fall below the poverty line, the size of the school, and the minority/majority make-up of the school. This was done by creating a composite scale based on the eight areas of policy change, ranging from 0 to 8, with eight being the maximum number of policy changes. The schools with eighth grade students showed the greatest differences by these characteristics:

- The schools in large metropolitan areas, particularly those with a high proportion of adults on welfare or unemployed, had the greatest number of policy changes; small places and metropolitan areas where a high proportion of adults were managers or professionals had the fewest changes.
- The schools with the highest percentage of students below the poverty line had more policy changes than those with a low poverty rate.
- Large schools had more policy changes than small schools.
- Schools with a majority of minority students had more policy changes than those that were integrated or had a high percentage of White students.

Elementary and high schools followed the same general pattern, although not as consistently. While differences for high schools were generally in the same direction, they were not statistically significant. Schools generally known to be most in need of improvement — in inner cities, in poverty areas, with concentrations of minorities, and of large size — are those that report making the most effort in terms of the eight policy change areas about which they were asked.

For convenience, the term "middle schools" is used to denote schools that have an eighth grade. Actually many are called junior high schools and many will also be K-12 schools.

PROGRESS TOWARD EXCELLENCE

The previous section summarized the major school reform efforts of the 1980s. In this section we describe the improvements, or lack of them, in the 1980s in terms of achievement, student efforts, and staying in school. However, there is no way to make a causal link between the two, and that is not intended.

What happened to achievement in the 1980s is likely the result of many different forces and developments. Raising scores of students at the bottom can be a carry-over effect from the "minimum competency" drives of the 1970s. Parents may have become more concerned by publicity given to falling test scores in the late 1970s, and reflected that concern in more attention to their children's school work. It was also a time when the school improvement and effective schools movements were working hard to improve schools in inner cities and under state-wide plans.

It is reasonable to suppose that some of the actions taken in the first half of the 1980s did help improve achievement. More academic courses were required in high school, and we know from national studies that there were increases in the percentages of high school students taking mathematics, science, foreign languages, and history. (See, for example, *What Americans Study*, issued by the ETS Policy Information Center in 1989.) There was some lengthening of the school day. There were more tests to pass to get to the next grade or to graduate. However, some of the reforms, such as raising standards for entering teachers and higher teacher pay, will have long lead times before their effect on student performance is known.

Even in the case of state regulations that require students to take more difficult academic courses, some of the effects are still to be felt. Legislation often had delayed effective dates, or was phased in so as not to affect students already in high school. A good example of the long lead times that may be involved is NAEP's explanation for reading improvements it found in the 1984 assessment. The NAEP reports stated that there was a strong possibility that such improvements were the result of an "early start" from Headstart and other new pre-school programs.

The following section provides a summary of the changes in student outcomes in the 1980s. The summary is intended to be objective. We recognize that this, too, is a somewhat elusive goal; characterizing progress or lack of it is a somewhat subjective exercise, even when the best statistics are available. This is particularly true in an economically competitive world where the ***requirements*** of jobs are thought

Figure 7
Educational Progress in the 1980s

Reading (1980-88)	
Age 17	Stable
Age 13	Stable
Age 9	Stable
Mathematics (1982-88)*	
Age 17	Up
Age 13	Up
Age 9	Up
Science (1982-88)*	
Age 17	Up
Age 13	Up
Age 9	Up
Writing (1984-88)	
Grade 11	Stable
Grade 8	Down
Grade 4	Stable
Civics (1982-88)	
Age 17	Down
Age 13	Stable
Effort	
Homework (1980-88)	Up
TV Watching (1982-88)	Down**
Enrollment of 16 and 17 Year-Olds in School	Up

See special note on sources on pages 14 and 15.

** Meaning that TV watching went up; we presume this has an adverse educational effect.*

by many to be rising; in that view you have to be running faster to stay in the same place.

Figure 7 provides a summary of what follows, in simple terms of whether the indicator used went up, down, or was stable during the period. In these terms, there was some improvement in about half of the measures used.*

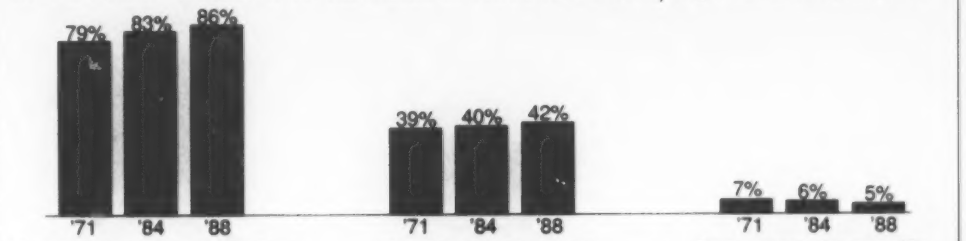
READING

Relative to other subjects assessed by the National Assessment of Educational Progress, student reading achievement levels are encouraging. However there was no improvement in the decade of the 1980s in average proficiency (see Figure 9).

- Figure 8 shows that 86 percent of 17-year-olds reached the 250 level, almost six in ten failed to reach the 300 level, where they "can find, understand, summarize and explain relatively complicated information," although there was slight improvement by 1988. Very few could read at the advanced 350 level, and the percent who did had slipped a bit by the 1988 assessment, as compared with results of assessments in the 1970s.

In this table and in the text that follows, changes are noted only when they are statistically significant

Figure 8
Trends in the Percent of 17-Year-Olds at Three NAEP Reading Proficiency Levels

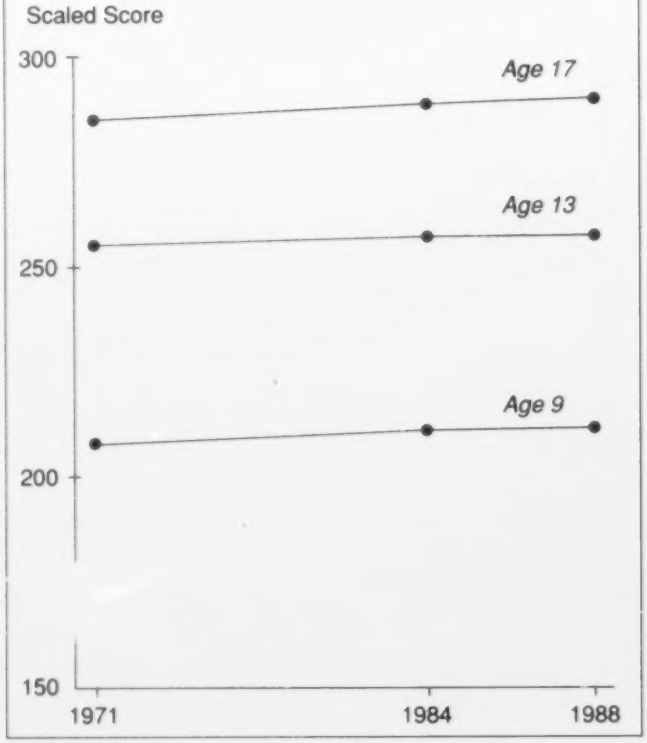


Can synthesize & learn from specialized reading materials **(Level 250)**

Can find, understand, summarize & explain relatively complicated information **(Level 300)**

Can search for specific information, interrelate ideas, make generalizations **(Level 350)**

Figure 9
NAEP Reading Proficiency Trends



- The reading performance of 13-year-olds was essentially stable over the decades of the '70s and '80s. (There was a slight improvement between 1971 and 1980, but performance was flat after that.)
- The average reading proficiency of 9-year-olds increased from 1971 to 1980 and ended the decade (1988) at a higher level than in 1971. There was no improvement in the 1980s.
- **Summing up**

  There were no gains in average reading proficiency in the 1980s. However, all three age groups read better at the end of the '80s than at the beginning of the 1970s.

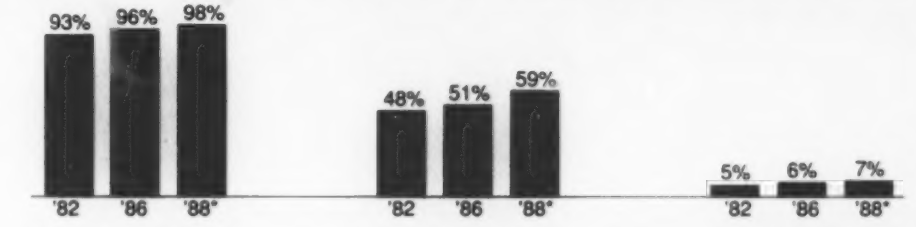
Source: "The Reading Report Card, 1971-1988," National Assessment of Educational Progress, Educational Testing Service, 1990.

MATHEMATICS

Average mathematics performance improved in the six years from 1982 to 1988 for all three ages assessed by NAEP — 17, 13, and 9 (see Figure 11).

- As shown in Figure 10, in 1988, 98 percent of 17-year-old students had mastered "basic operations and beginning problem solving," up from 93 percent in 1982. More than three in four 13-year-olds were at this 250 level on the NAEP scale, as were just over one in four 9-year-olds. At this level students have an initial understanding of the four basic operations, and are developing an ability to analyze simple logical relations.
- Almost six in ten 17-years-olds reached the 300 level, characterized by "moderately complex procedures and reasoning." Just one in five 13-year-olds were at this level. Students at this level can compute with decimals, simple fractions, and commonly encountered percents. They can, among others things, calculate the areas of rectangles, solve simple linear equations, find averages, and use logical reasoning to solve problems.
- Just 7 percent of 17-year-olds reached the 350 level, characterized by "multi-step problem solving and algebra."

Figure 10
Trends in the Percent of 17-Year-Olds at Three NAEP Mathematics Proficiency Levels

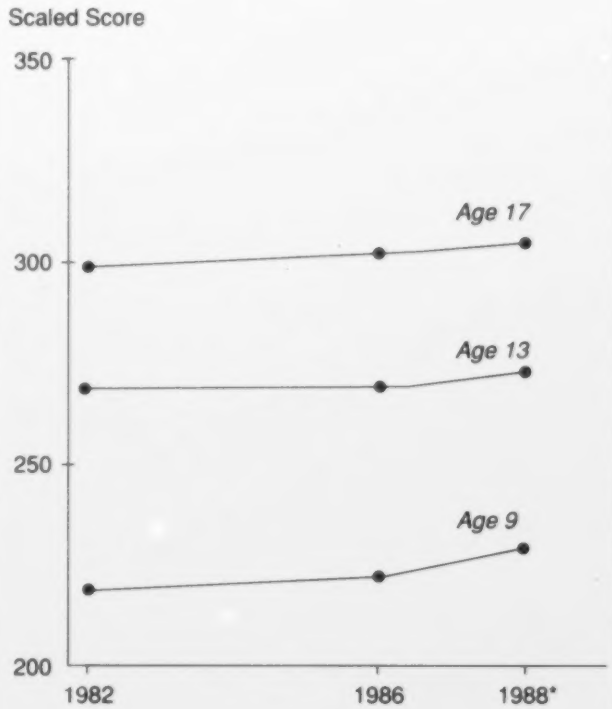


Basic operations & beginning problem solving **(Level 250)**

Moderately complex procedures & reasoning **(Level 300)**

Multi-step problem solving & algebra **(Level 350)**

Figure 11
NAEP Mathematics Proficiency Trends



There was no statistically significant increase in this percent compared with 1982 and 1986.

- **Summing up**

There was some improvement in average proficiency in the 1980s; however, there was essentially none at the higher level we associate with having taken several years of high school math. Only a small fraction of high school students leave high school prepared to enter quantitative fields in college, or to do the kind of statistical quality control work increasingly required in factories.

Source for figures: "The Mathematics Report Card," National Assessment of Educational Progress, Educational Testing Service, 1988, p.32. *Data for 1988 is from "Disentangling the NAEP 1985-86 Reading Anomaly," Educational Testing Service, 1989, p. 129. While the 1988 data for mathematics was included in this special study, it was not released in a regular NAEP trend report.

SCIENCE

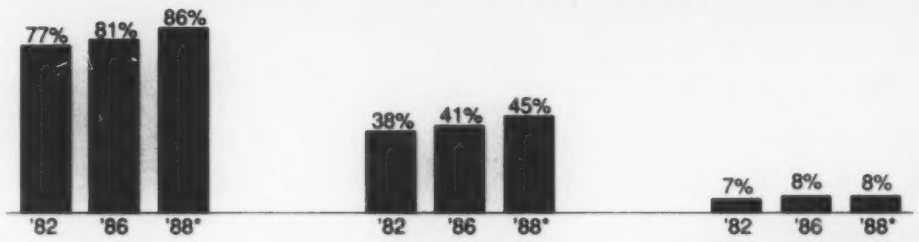
Although students improved their science achievement during the 1980s, these gains were from a very low initial level of proficiency. International assessments show that the U.S. remains among the nations that perform lowest in science in the industrialized world.

As can be seen in Figure 13, although the average proficiency scores advanced for all three age groups, these gains have been more pronounced at the lower and middle levels of the scales than at the top (see Figure 12). The percentage of 17-year-olds reaching the 350 level was essentially flat, remaining at 7 or 8 percent since the 1977 assessment.

Given the dire state of achievement in science, it is useful to understand what American 17-year-old students *don't* know and can't do in science.

- Fourteen percent were not likely to be able to perform at the 250 level with tasks such as knowing which part of a screw-base type light bulb glows to produce light.
- Fifty-five percent were unable to do tasks at the 300 level, such as choosing the best explanation of why marine algae are most often restricted to the top 100 meters of the ocean.

Figure 12
Trends in the Percent of 17-Year-Olds at Three NAEP Science Proficiency Levels

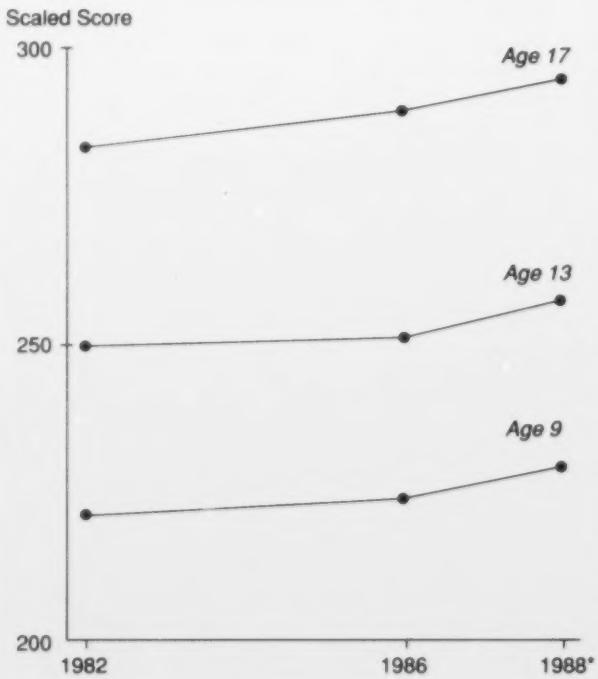


Applies basic scientific information **(Level 250)**

Analyzes scientific procedures & data **(Level 300)**

Integrates specialized scientific information **(Level 350)**

Figure 13
NAEP Science Proficiency Trends



- Ninety-two percent were unable to do tasks at the 350 level, such as choosing the object that has the greatest density when given several with specified mass and volume.

- **Summing up**

  The U.S. has been bringing up the rear in science achievement among developed countries. From this low level of achievement, improvement began in the 1980s at all three grade levels.

Source for figures: "The Science Report Card," National Assessment of Educational Progress, Educational Testing Service, 1988, p.39. *Data for 1988 is from "Disentangling the NAEP 1985-86 Reading Anomaly," Educational Testing Service, 1989, p. 141. While the 1988 data for mathematics was included in this special study, it was not released in a regular NAEP trend report.

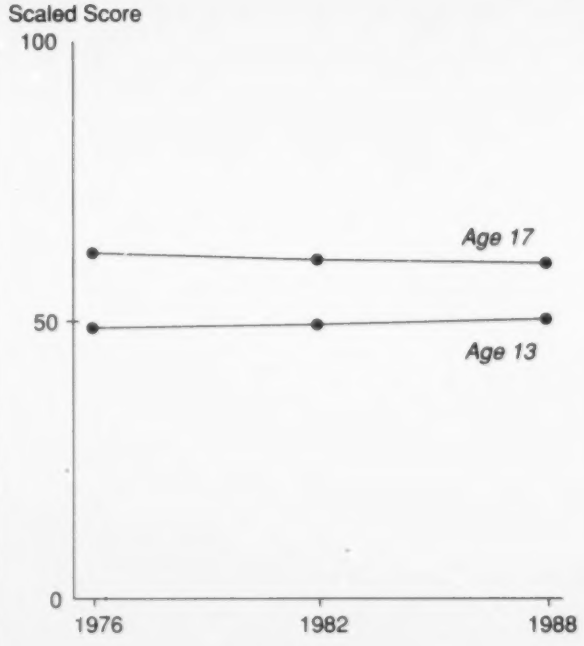
CIVICS

In 1988, 17-year-old students did not perform as well as their counterparts in previous assessments in 1982 and 1976. Thirteen-year-olds performed at about the same level in all three assessments (see Figure 14).

Beginning with the 1988 assessment, NAEP developed a new proficiency scale (from 0 to 500) similar to that used in other subjects. The NAEP report also described what students know and can do at 50-point intervals along the scale (see Figure 15).

- As shown in Figure 15, in Grade 12, 49 percent of students were at level 300 where they "understand specific government structures and functions." At this level they understand the terms "separation of powers," and they know how the Chief Justice of the United States Supreme Court is selected.
- In Grade 8, 61 percent of students were at level 250, where they "understand the nature of political institutions and the relationship between citizen and government." They know, for example, that the term of the President of the United States is four years, and that government officials are elected by secret ballots.
- In Grade 4, 71 percent of students were at level 200, where they can "recognize the existence of civic life." They know such things as the reason a city might have a crosswalk law, and who becomes President of the United States if the President dies.

Figure 14
NAEP Civics Proficiency Trends

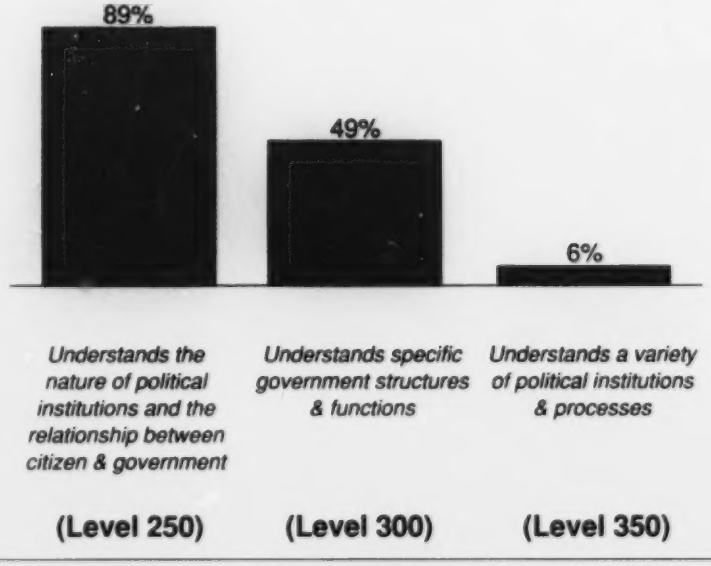


- **Summing up**

  There was basically no improvement in civics knowledge in the 1980s, and some ground was lost among 17-year-olds. Just half of 12th graders understood specific government structures and functions and just one in 17 achieved a more sophisticated understanding of how government works.

Sources for figures: "The Civics Report Card," National Assessment of Educational Progress, Educational Testing Service, 1990, pp. 13, 33-38.

Figure 15
Percent of 12th Graders at Three NAEP Civics Proficiency Levels, 1988


89%
49%
6%
Understands the nature of political institutions and the relationship between citizen & government
Understands specific government structures & functions
Understands a variety of political institutions & processes
(Level 250)
(Level 300)
(Level 350)

WRITING

In 1988 over one-third of 11th graders* could not adequately write a brief description of a desirable summer job and their qualifications for it, and very few could do it really well (see Figure 16). This writing level was about the same as it had been four years earlier. Only 14 percent of these 11th graders did an adequate job in an analytic writing task requiring them to compare modern day food with a description they had read of food on the frontier (see Figure 17). Although this level was slightly better than in 1984, practically none could do the task really well.

Looking at all writing tasks common to the 1984 and 1988 assessments, the changes in this four-year period are as follows:

- *Grade 11*. On average, there was no significant change.
- *Grade 8*. While the trends on tasks were mixed, there were more declines than gains.
- *Grade 4*. There was improvement in several tasks and no declines. On average, there was no significant change.

Contrary to the low proficiency in writing to inform, to analyze, and to persuade, NAEP reports that, "It is clear that most students were able to control the conventions of written English." Most spelling problems disappear by grade 11, although even the best papers contained some errors. There were few changes from 1984 to 1988 in the mastery of writing conventions in the three grades assessed.

Just over half of 4th grade students said they like to write. This declines to 37 percent by the 11th grade.

- **Summing up**

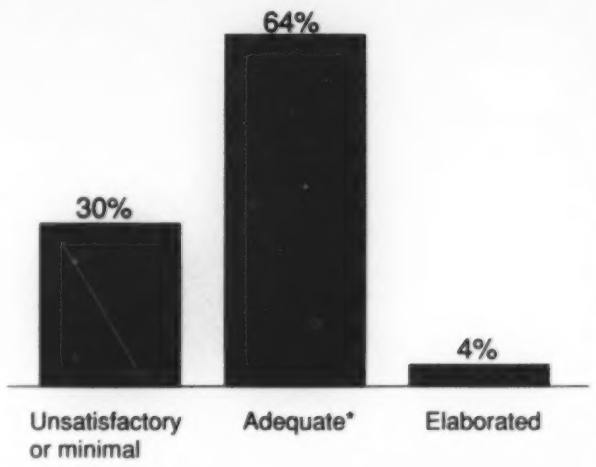
  Our students are poor writers and they are not improving. They don't much like to write, and they like it less as they go through school. They do, though, learn grammar, spelling, and punctuation reasonably well. There was no progress in the 1980s.

Source for figures: "The Writing Report Card, 1984-88," National Assessment of Educational Progress, Educational Testing Service, 1990, pp. 12 & 20.

"Adequate" means responses included the information and ideas necessary to accomplish the underlying task and were considered likely to be effective in achieving the desired purpose.

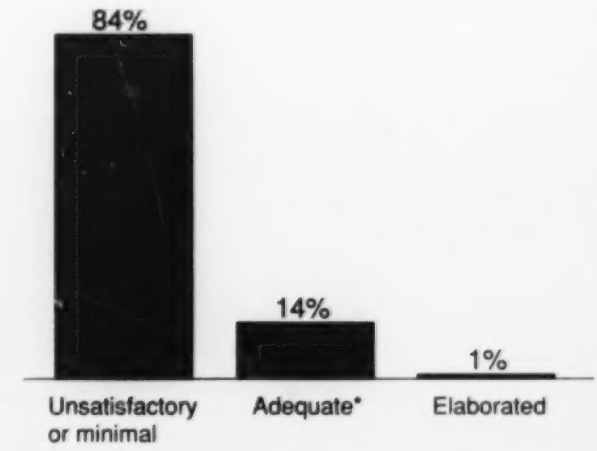
The 1988 NAEP trend report for writing was about 11th graders rather than 17-year-olds, as in other trend reports.

Figure 16
Writing to Inform, 11th Grade, 1988



The "Job Application" task required students to provide a brief description of a desirable summer job and to summarize their previous experience or qualifications.

Figure 17
Analytic Writing, 11th Grade, 1988



The "Food on the Frontier" task required students to read a social studies passage about frontier life and then to explain why modern-day food differs from frontier food.

STAYING IN SCHOOL

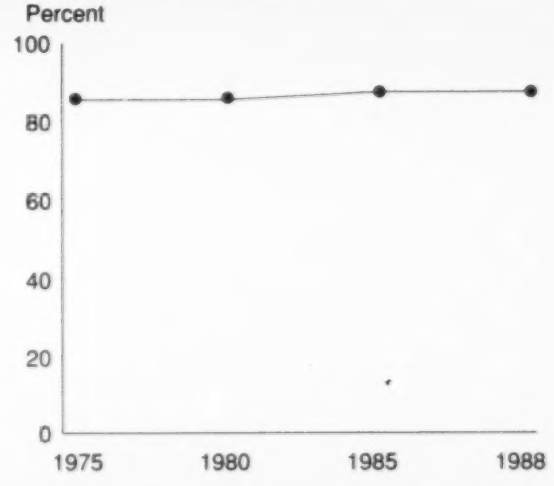
While the focus of attention is on "drop-out" rates as a measure of failure to complete school, that rate has proven elusive as a measurement. We here use three measures to compose a picture of what happened in the 1980s: 1) the percentage of 16- and 17-year-olds enrolled in school, 2) the percentage of 16- to 24-year-olds who achieved a high school diploma, including the General Education Development certificate (GED), and 3) the percentage of high school graduates who are enrolled in college the October after graduating from high school.

Ages 16 and 17 are critical years for dropping out of school. There has been a slight increase in enrollment rates of students of this age in the 1980s (see Figure 18). This is particularly encouraging in view of the fact that achievement standards were being raised during this time and many predicted that this would negatively affect enrollment rates.

In 1988, 87 percent of 16- to 24- year-olds had obtained high school diplomas. This percent has been essentially stable over the last 15 years (see Figure 19).

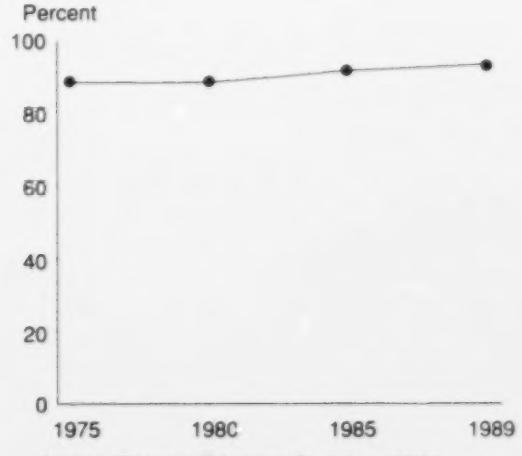
After hovering around 50 percent throughout the 1970s, the percent of high school graduates entering college (both 2- and 4-year institutions) the fall after their high school graduation has been increasing slightly. It rose to 56 percent by 1985, and has stayed there through 1987 (see Figure 20).

Figure 19
Percent of 16- to 24-Year-Olds with High School Diplomas



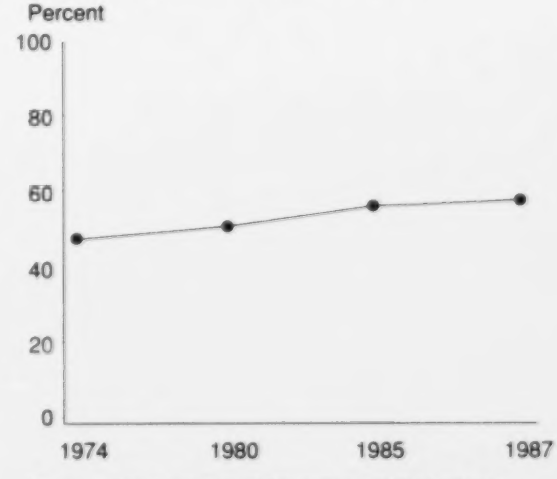
Source: Derived from "Dropout Rates in the United States: 1988," National Center for Education Statistics, 1989, p. 53.

Figure 18
Percent of 16- and 17-Year-Olds Enrolled in School



Source: "Digest of Education Statistics, 1990," National Center for Education Statistics, Table 7, in press.

Figure 20
Percent of High School Graduates Enrolled in College the Following October



Source: "The Condition of Education, 1990." National Center for Education Statistics, p. 16.

STUDENT EFFORT

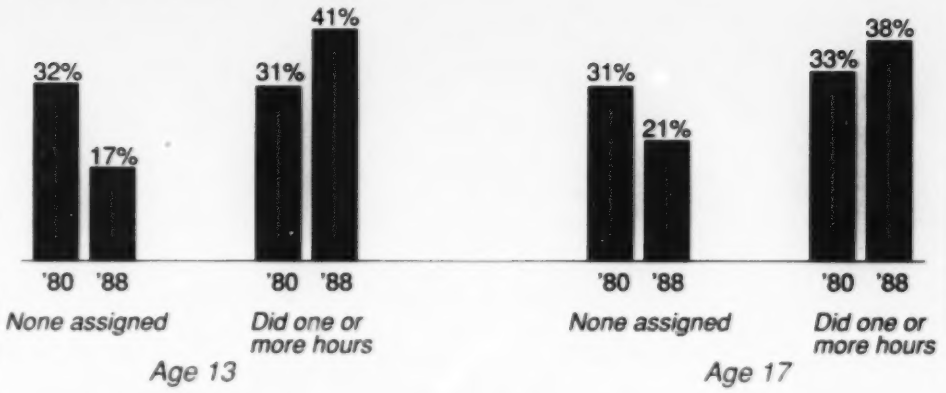
The percentage of 13-year-olds who said they received no homework assignments dropped from 32 percent in 1980 to 17 percent in 1988. A similar drop occurred at age 17 (see Figure 21).

There was also a 10 percent increase between 1980 and 1988 among 13-year-olds who do one or more hours of homework each day; the increase was 5 percent among 17-year-olds, with almost two in five doing that much homework in 1988. However, in 1988, 14 percent didn't do their assigned homework, and another 24 percent did less than one hour.

While homework performance improved, the number of 17-year-olds who read books, newspapers, and magazines slipped, from 26 percent who read them daily in 1984 to 21 percent who did so in 1988.

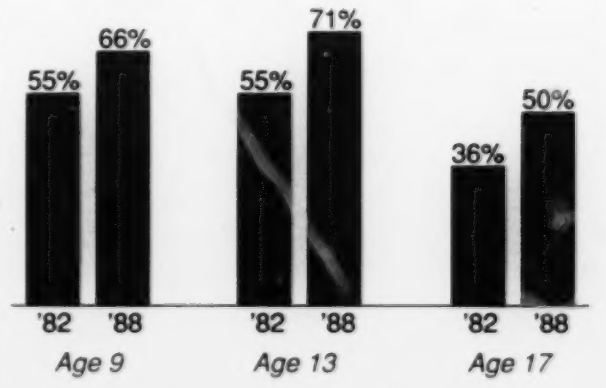
From 1984 to 1988 there was little change in the number of students who said they read independently for "fun." While over half of the 9-year-olds do so daily, the proportion drops to 36 percent of 13-year-olds and 28 percent of 17-year-olds. Television watching, however, increased during the decade (see Figure 22).

Figure 21
Homework Trends



Source: "The Reading Report Card," National Assessment of Educational Progress, Educational Testing Service, 1990, p. 40.

Figure 22
Percent of Students Watching 3 or More Hours of Television per Day



Source: 1982 data from "The Mathematics Report Card: Are We Measuring Up?" National Assessment of Educational Progress, Educational Testing Service, 1988, p. 112. 1988 statistics are from NAEP unpublished data.

- The percentage of 17-year-olds watching three or more hours of TV each day grew from 36 to 50 percent from 1982 to 1988.
- For 13-year-olds, 71 percent watched three or more hours in 1988 compared with 55 percent in 1982.
- Among 9-year-olds, the comparable percentages were 66 in 1988 and 55 in 1982.
- **Summing up**

  Students are making more effort at home in terms of doing homework. But they read less as they get older, and they watch a lot of television. Television watching increased substantially in the 1980s.

PROGRESS TOWARD EQUALITY

The previous section describes progress toward "excellence," the term associated with the education reform movement of the 1980s. While this section is titled "progress toward equality," the two goals are, of course, intertwined. We cannot create the educated labor force and citizenry that is our goal without striving to improve the education of our minority populations.

While there was very modest progress in the 1980s in raising average performance in some areas, there was more substantial progress in raising the proficiency of minority populations — and narrowing the gap between majority and minority — particularly for Black students. In the case of entry into college, however, the gap widened. There were only a few instances where the gap narrowed between Hispanic students and White students.

Figure 23 provides a brief overview of areas where performance gaps were reduced or stayed the same. The text and graphs that follow provide more details of the magnitude of these changes. Even where gaps did narrow, they often still remained quite large.

Figure 23
Narrowing Education Gaps in the 1980s

	Black*	Hispanic*
Reading (1980-1988)		
Age 17	Reduced	Same
Age 13	Reduced	Same
Age 9	Same	Same
Mathematics (1978-1986)		
Age 17	Reduced	Same
Age 13	Reduced	Reduced
Age 9	Reduced	Same
Science (1977-1986)		
Age 17	Reduced	Same**
Age 13	Reduced	Reduced
Age 9	Reduced	Same
Enrolled in School at Age 16 & 17 (1980-89)	No Gap	Same
High School Diploma, Age 16-24 (1980-88)	Gap Eliminated	Same
Percent of Graduates Who Enrolled in College	Widened	Widened

**In trend data used from the National Assessment of Educational Progress, race and ethnicity of students is based on the observations of the assessment administrators.*

***The gap declined from 1977 to 1982, then widened from 1982 to 1986.*

READING GAPS

While gaps in reading proficiency between minority and majority populations are still quite substantial, they narrowed during the 1980s, more at basic and middle levels appropriate for a particular age than at the top of the range.

- The narrowing of gaps at age 17 can be seen in Figures 24, 25, and 26. The percentage difference between Black students and White students at the 250 level narrowed from 43 to 13, and the gap between Hispanic students and White students narrowed from 26 to 16 percent. There were smaller gains at the 300 level, and a larger gap (see Figure 25). There was also a decline in average scale score differences for Black students (see Figure 26).
- At age 13, achievement, on average, was virtually stable from 1980 to 1988 for White students as well as Hispanic students, while it rose for Black students from a 232 scale score to 243.
- At age 9, the overall achievement score for all groups combined dropped from 215 to 212, but this was not statistically significant. In fact, there were no significant changes among any of the three groups from 1980 to 1988. The achievement gap remained unchanged.

Because the gap in reading proficiency between minority and majority populations at age 9 did not narrow through the 1980s, a question arises as to whether gaps in reading achievement will narrow during the next decade as this age group moves through school. This concern is of particular interest since the gap between 9-year-old Black students and White students narrowed by 19 percent in the years between 1971 and 1980.

- **Summing up**

  The achievement gap was considerably narrowed at age 17 between White students and Black students, but more at the basic and middle ranges of the NAEP scale than at the top. While Hispanic students reduced the gap at the NAEP 300 reading level (adept), there was no significant improvement in the averages. The gap was also reduced between Black and White 13-year-olds, but not between Hispanic and White students of that age. There were no reductions in the gap at age 9.

Source for figures: "The Reading Report Card, 1971-1988," National Assessment of Educational Progress, Educational Testing Service, 1990, pp. 62-64.

Figure 24
Reading Performance Gap, Level 250, Age 17

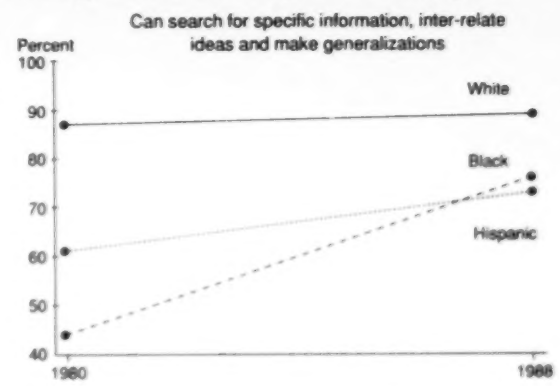


Figure 25
Reading Performance Gap, Level 300, Age 17

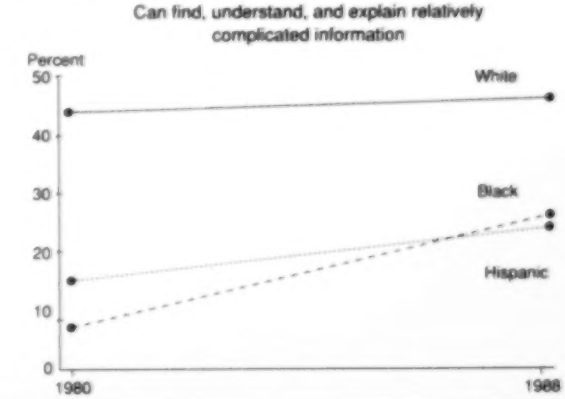
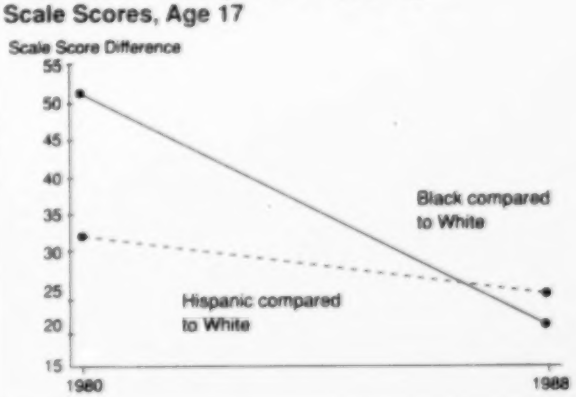


Figure 26
Difference in Average NAEP Reading Scale Scores, Age 17



MATHEMATICS GAPS

The gap between White students and Black and Hispanic students was considerably reduced between 1978 and 1986 among 17-year-olds at the 250 level, where students can do basic mathematical operations and beginning problem solving. The percentage of Black students at or above this level rose from 70 to 86, and for Hispanic students from 77 to 91, while the percentage of White students at this level remained steady at 98 percent (see Figure 27).

However, the gaps remained essentially the same among 17-year-olds at the 300 level, where they can do moderately complex procedures and reasoning (see Figure 28).

- Figure 29 shows the differences between the average NAEP scale score for Black and Hispanic students when compared to the average scores for White students. At age 17, the average score differences between Black and White students declined from 38 points in 1978 to 29 points in 1986. The decline in the difference between White and Hispanic students was smaller and not enough to be significant.
- At age 13, the gap in average scores narrowed sharply between 1978 and 1986 for Black students, from 42 points to 24 points, and substantially for Hispanic students, from 34 to 19.
- At age 9, the gap for Black students narrowed less than at the older ages; there was no improvement in the gap for Hispanic students.
- **Summing up**

  At age 17, the performance gap between Black and White students declined between 1978 and 1986, but declined little for Hispanic students. There were large gains at age 13, and small gains for 9-year-old Black students, but none for 9-year-old Hispanic students.

Source for figures: "The Mathematics Report Card, Are We Measuring Up?" National Assessment of Educational Progress, Educational Testing Service, 1988, pp. 138, 141.

Figure 27
Mathematics Performance Gap, Level 250, Age 17

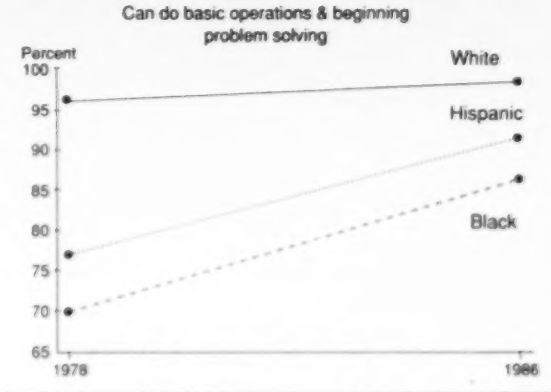


Figure 28
Mathematics Performance Gap, Level 300, Age 17

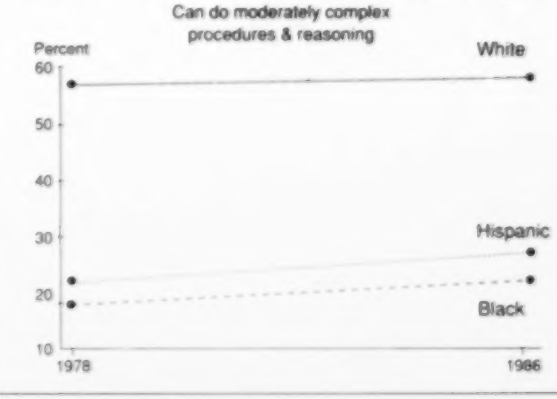
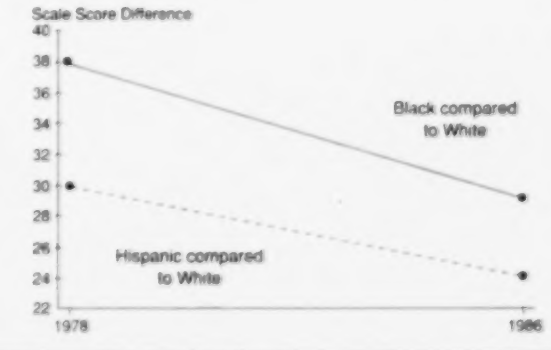


Figure 29
Difference in Average NAEP Mathematics Scale Scores, Age 17



SCIENCE GAPS

While just under half of the White 17-year-old students are at or above the 300 level (where they can analyze scientific procedures and data), they number four times the proportion of Black students at that level (12 percent) and three times the proportion of Hispanic students (16 percent). The gap at this relatively high level remained essentially unchanged between 1977 and 1986 (see Figure 31).

- In terms of average proficiency at age 17, the White/Black gap in scale scores dropped from 57 to 45 between 1977 and 1986 while there was no significant change in the gap between White and Hispanic students (see Figure 32).
- The gap between average science scores for 13-year-old White and Black students declined from 48 to 38 points, and between the scores of White and Hispanic students from 43 to 33 points. The largest gains were at the relatively low level of 200, where students understand simple scientific principles.
- The score gap between 9-year-old Black students and White students dropped from 45 to 36 points, but there was no significant drop in the gap between White and Hispanic students.
- **Summing up**

  No gains were made between 1977 and 1986 in closing the very large gap in science performance between 17-year-old White and minority students at the 300 level. There were, however, some gains below that level for Black students; there were none for Hispanic students (see Figure 30). Black students improved science performance at age 13 and at age 9, but Hispanic students made no statistically significant gains.

Source for figures: "The Science Report Card: Elements of Risk and Recovery, 1984-88," National Assessment of Educational Progress, Educational Testing Service, 1988, pp. 146 & 149.

Figure 30

Science Performance Gap, 250 Level, Age 17

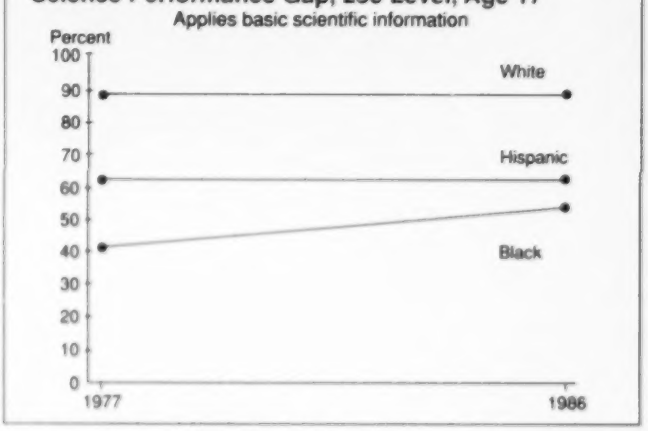


Figure 31

Science Performance Gap, 300 Level, Age 17

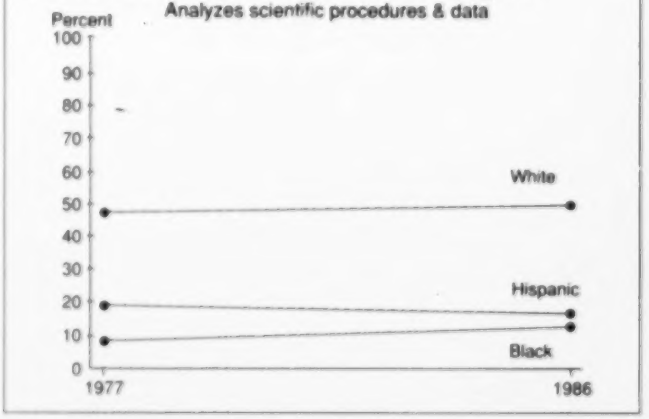
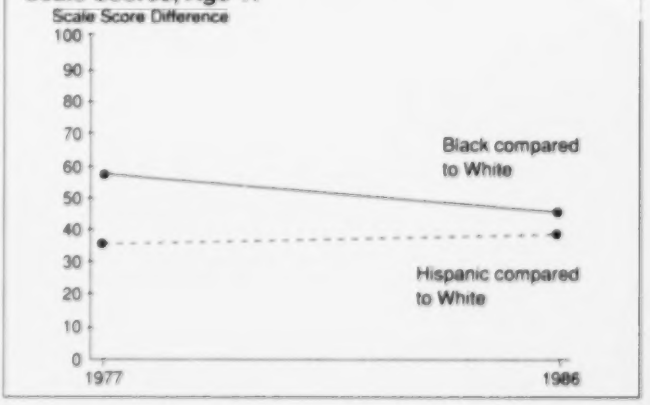


Figure 32

Difference in Average NAEP Science Scale Scores, Age 17



GAPS IN STAYING IN SCHOOL

In terms of being enrolled in school at ages 16 and 17, and getting a high school diploma or GED certificate by age 24, Black youth have essentially drawn even with White students in the 1980s (see Figures 33 and 34). For Hispanic students, however, the gap remains considerable and has not narrowed.

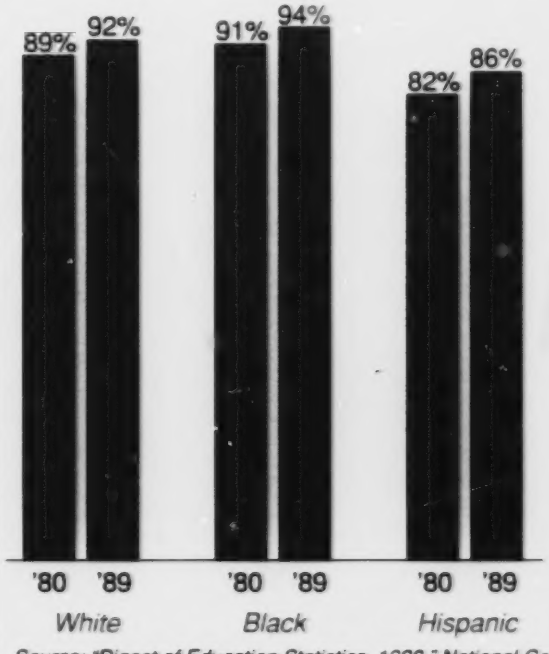
A true and uniform measure of dropping out of school remains elusive, and the National Center for Education Statistics uses several approaches. One of them is the "event rate," which reveals how many students who enrolled at the beginning of a school year are no longer in school at the end of the year and have not received a high school diploma. By this measure, Black youth still have a higher dropout rate. It may be that Black youth are less likely to get their diploma in the normal year of graduation, but make up for it in the many "second chance" programs, such as Opportunity Industrialization Centers of America (OICS).

The rate of Black graduates who go to college dropped precipitously in the early 1980s, with a low of 38 percent in 1983, rising to 44 percent by 1987. Meanwhile, the rate for White students climbed to 58 percent. The rate of Hispanic students going to college rose from 40 percent in 1977 to 45 percent in 1987, now about equal to the rate for Black students.

■ **Summing up**

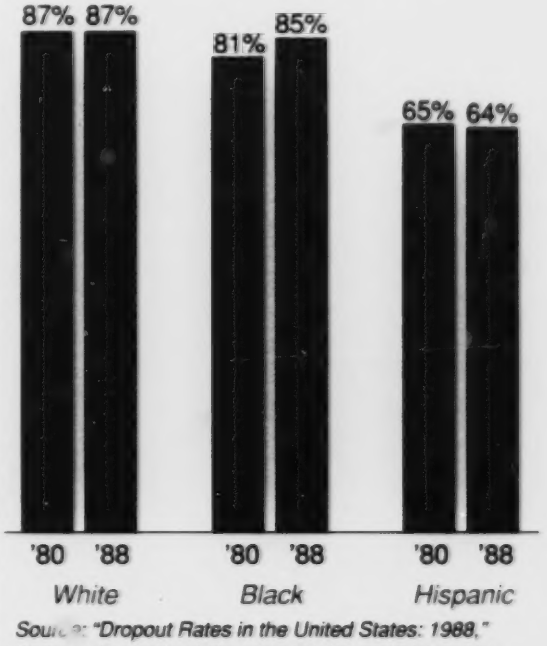
The percentage of Black youth who achieve a high school diploma or equivalent is now about equal, or nearly equal, to White youths, but Hispanic youth lag behind. The college-going rate for Black high school graduates has improved since 1983 (although still below the 1977 rate); the rate for Hispanic students is advancing. However, the gap widened for both groups, as compared with White students.

Figure 33
Percent of 16- and 17-Year-Olds Enrolled in School



Source: "Digest of Education Statistics, 1990," National Center for Education Statistics, Table 7, in press.

Figure 34
Percent of 16- to 24-Year-Olds with High School Diplomas



Source: "Dropout Rates in the United States: 1988," National Center for Education Statistics, 1989, p. 53.

GENDER GAPS

The *reading* score differential, which favors females, is little changed; more females continue to reach the 350 level than males.

In *mathematics*, males lead females in achievement, but the gap, on the average, is small and slightly lower than in 1978. However, the difference in the percentage of males and females reaching the 350 level is still considerable.

The gap between male and female scores has been reduced slightly in *science*. Male scores exceed those of females and twice as many males as females reach the 350 level.

In *writing*, females outperform males considerably, by 18 points on a 0 to 400 scale.

A summary is provided in Figure 35.

Figure 35
Gender Gaps

	Male	Female	Male	Female
Reading – 17-Year-Olds (0-500 Scale)	1980		1988	
Average Male Student Scores Are 8 Points Lower Than Females*	282	290	286	294
The Percent of Female Students Scoring 350 (or Higher) Is Slightly Higher Than Males	5%	6%	4%	6%
Mathematics – 17-Year-Olds (0-500 Scale)	1978		1986	
Average Female Student Scores Are 6 Points Lower Than Males	304	297	305	299
The Percent of Female Students Scoring 350 (or Higher) Is Lower Than Males	10%	6%	8%	5%
Science – 17-Year-Olds (0-500 Scale)	1977		1986	
Average Female Student Scores Are 13 Points Lower Than Males	297	282	295	282
The Percent of Female Students Scoring 350 (or Higher) Is Much Lower Than Males	12%	5%	10%	5%
Writing – 11th Graders (0-400 Scale)	1984		1988	
Average Male Student Scores Are 18 Points Lower Than Females	212	235	211	229

Sources: The NAEP report cards for science, mathematics, reading, and writing, cited in detail elsewhere.

**All comparisons are for the latest year.*

SUMMARY

The "education reform decade" is most identified with state level "reform" laws and policy changes initiated and carried out by governors and state legislatures. The decade is associated with what came to be called the "excellence movement," a shorthand reference to the reforms called for in the dramatic 1983 report of the National Commission on Excellence in Education, titled *A Nation at Risk*. Since a lot of state action was well under way by that time, particularly in testing, we date the reform decade from about 1978, when a blue-ribbon panel, chaired by Willard Wirtz, issued its report on the decline in scores on the Scholastic Aptitude Test (SAT). By about 1988, the nation was moving beyond these "top down" approaches to reform and a new wave of effort was being called for; the word most commonly used to represent this new effort was "restructuring."

LAW AND POLICY CHANGES

State-level action was comprehensive in tightening the system, but worked largely within the traditional structure of American public education.

- *High school graduation requirements* were raised in 42 states, although the requirements of many states still fell far short of the recommendations made in *A Nation at Risk*. By 1990, 37 states required four or more years of English, 28 required three or more years of social studies, 10 states required three years of mathematics, and four states required three years of science.
- *Student testing*, already extensive by 1983, continued to expand. By 1990, 47 states had state-wide programs. Thirty-eight were designed to monitor student progress, 23 to use in "gatekeeping" (promotion or graduation), 20 to identify needs for remedial instruction and nine for use in distributing state funds.
- *"Accountability"* systems expanded and relied heavily on standardized testing of students. By 1989, accountability was identified as a top priority of chairs of education committees in 31 state legislatures. By 1990, 23 states went beyond test scores and adopted an integrated set of indicators. Twenty-five states use performance data to trigger other state actions aimed at improving education.
- *Teacher standards* were subjected to sweeping changes. While in 1980 only a handful of states tested teachers, 39 states do so today. Three test only for admission to teacher education programs, 18 test only for teacher certification, and 18 test for both admission and certification.

Analysis of the questionnaire filled out by school principals in the 1988 assessment by the National Assessment of Educational Progress permits the first summary of policy changes at the level of the school for the nation as a whole. The data apply to the period from 1984 to 1988.

- *Stricter attendance* policies were adopted by 73 percent of high schools, 51 percent of middle schools, and 46 percent of elementary schools.
- *Academic requirements to participate in athletics and extracurricular activities* were established in 70 percent of high schools, 60 percent of middle schools, and 37 percent of elementary schools.
- *Stricter standards of student conduct* were reported in 70 percent of high schools, 68 percent of middle schools, and 63 percent of elementary schools.
- *Longer school days* were reported in 40 percent of high schools, 30 percent of middle schools, and 34 percent of elementary schools.

- *More homework* was required in 27 percent of high schools, 30 percent of middle schools, and 32 percent of elementary schools.
- *A longer school year* was established in 17 percent of high schools, 16 percent of middle schools, and 18 percent of elementary schools.
- *The greatest number of policy changes* were found in schools in large metropolitan areas, schools with the highest percent of students below the poverty line, large schools, and schools with a majority of students from minority populations. This was particularly true of middle schools.

PROGRESS TOWARD EXCELLENCE

Thus far we have *reported* on reform efforts in the 1980s, but we have not tried to judge their significance; we aspire to inform judgment, not make it. Expectations about the state of the system, the nature of the reforms, and the appropriateness of the changes act as a lens through which different people will come to form different views about the successes and failures of the decade. In *absolute* terms, there was some progress on some fronts, no change on others, and there were a few slips backwards.

- **Reading.** There were no gains in average proficiency in the 1980s. However, all three age groups (ages 9, 13, and 17) read better at the end of the 1980s than at the beginning of the 1970s.
- **Mathematics.** There was some improvement in average proficiency in the 1980s; however, there was essentially none at the higher level we associate with having taken several years of high school math.
- **Science.** The U.S. has been bringing up the rear in science achievement among countries of the developed world. From this low level of achievement, improvement began in the 1980s at all three age levels assessed by NAEP.
- **Civics.** There was basically no improvement in civics knowledge in the 1980s, and some ground was lost among 17-year-olds. Just half of 12th graders understand specific government structures and functions and just one in 17 reach any degree of sophistication about how government works.
- **Writing.** Our students are poor writers and they are not improving. They don't much like to write, and they like it less as they go through school. They do, though, learn grammar, spelling, and punctuation reasonably well. There was no progress in the 1980s.
- **Staying in school.** There was a slight increase in the school enrollment rate for 16- and 17-year-olds in the 1980s. Also, the number of high school graduates as a percent of 17-year-olds rose slightly in the 1980s, but remained below the peak reached in 1969. In 1988, 87 percent of 16- to 24-year-olds had obtained high school diplomas (including GEDs), essentially unchanged over the last 15 years.
- **Student effort.** Students are making more effort at home in terms of doing homework. But they read less as they get older and they watch a *lot* of television. Television watching increased substantially in the 1980s.

PROGRESS TOWARD EQUALITY

There have long been large gaps in educational achievement between minority student populations and the majority. There have also been gaps between the sexes, though these have been smaller. Although these gaps seem unyielding, a critical test of any effort to improve educational achievement is whether they are being narrowed.

The gaps that remain are often very large, and it is necessary to keep the improvements made in that perspective; both the progress and the remaining gaps are reported in this document. Where progress is made it should be recognized and applauded, but the applause should not mask our hearing the unsettling fact that these unacceptable gaps are still with us in most cases. There *was* progress on a number of fronts in the 1980s, demonstrating that sustained effort *can* have results. These successes should encourage greater effort and not be taken as an invitation to complacency.

- **Reading gaps.** The achievement gap between Black students and White students was considerably narrowed at age 17, but more at the basic and middle ranges of the NAEP scale than at the top. At the NAEP 300 reading level (adept), the gap narrowed between Hispanic students and White students, but there was no significant improvement in the averages. The gap was also reduced between Black and White 13-year-olds, but not between Hispanic and White. There were no reductions in the gap at age 9.
- **Mathematics gaps.** At age 17, the performance gap was reduced for Black

students, but little for Hispanic students. There were large gains at age 13, and small gains for 9-year-old Black students, but none for 9-year-old Hispanic students.

- **Science gaps.** No gains were made at closing the very large gap between minority and White students at age 17 at the 300 level. Although there were some gains below that level for Black students, there were none for Hispanic students. There were gains at age 13 and at age 9 for Black students, but no statistically significant gains for Hispanic students.
- **Gaps in staying in school.** Black youth have caught up, or nearly so, to White youth in getting a high school diploma, but Hispanic youth lag behind. The gap widened in the rate at which minority and majority students enter college.
- **Gender gaps.** During the 1980s gaps in achievement between males and females were reduced very slightly in science (males higher) and mathematics (males higher). There was a larger reduction in writing (females higher), and no change in reading (females higher).

Education was high on the national agenda in the decade of the 1980s. This report attempts to analyze the major happenings of the decade and to sum up where we stand at the beginning of a new decade. The formulation of policy must be guided by a knowledge of where we are and where we have been, as well as a vision of where we are going and where we want to be in the year 2000.

REFERENCE NOTES

INTRODUCTION

In 1978, a blue-ribbon panel appointed by the College Board issued what might be considered the first education reform report, titled *On Further Examination: The Report of the Advisory Panel on the SAT Score Decline*. In the preface to the panel's report, Sidney P. Marland, president of the College Board, wrote, "In my capacity as president of the College Board, and in consultation with William J. Turnbull, President of Educational Testing Service, I invited 21 members of the Advisory Panel on the Scholastic Aptitude Test Score Decline to undertake this work." In 1981, U.S. Secretary of Education T. H. Bell appointed the National Commission on Excellence in Education which in 1983 issued a report titled *A Nation at Risk: The Imperative For Education Reform*.

THE REFORMS OF THE 1980S

The principal source for this section is a study based on a survey of the 50 states, which was commissioned by the ETS Policy Information Center and carried out by Richard Coley and Margaret Goertz, of Educational Testing Service. Titled *Educational Standards in the 50 States: 1990*, it was published as a Research Report by Educational Testing Service in 1990 (RR 90-15). Prior reports in this series (1986 and 1988) were also used to report on trends during the decade. The data on school level reforms are from another analysis carried out in the ETS Policy Information Center, an ETS Research Report (RR-90-3) titled *Policy Changes and School Climate: An Analysis of the NAEP School Questionnaire (1987-1988)*, by Lawrence Bernstein. The report used the results of a questionnaire administered to the principals of schools which was included in the assessment carried out in 1988 by the National Assessment of Educational Progress. (To order either publication, write to Research Publication, Educational Policy Research Division, Room R-143 (05-R), Educational Testing Service, Princeton, NJ 08541).

This section also makes use of a 1988 report by the U.S. Department of Education's Office of Educational Research and Improvement, titled *Creating Responsible and Responsive Accountability Systems*, and cites from *Education Politics for the New Century*, edited by Douglas E. Mitchell and Margaret E. Goertz, The Falmer Press, 1990.

PROGRESS TOWARD EXCELLENCE

The reports and studies drawn upon in this section are as follows:

The Reading Report Card, 1971-1988, Ina V.S. Mullis and Lynn B. Jenkins, National Assessment of Educational Progress, Educational Testing Service, 1990.

The Mathematics Report Card: Are We Measuring Up?, John A. Dossey, Ina V.S. Mullis, Mary M. Lindquist, and Donald L. Chambers, National Assessment of Educational Progress, Educational Testing Service, 1988.

The Science Report Card: Elements of Risk and Recovery, Ina V.S. Mullis and Lynn B. Jenkins, National Assessment of Educational Progress, Educational Testing Service, 1988.

Disentangling The NAEP 1985-86 Reading Anomaly, Albert E. Beaton and Rebecca Zwick, Educational Testing Service, Revised February 1990. (The 1988 data on mathematics and science are from this report, and are a by-product of the study conducted in 1988 to clear up questions about the 1985-86 reading results. The authors state "To reproduce the 1986 assessment procedure precisely required administering some mathematics and science questions in 1988.... The mathematics and science data have been analyzed for comparison to those collected in 1986.")

The Civics Report Card, Lee Anderson, Lynn B. Jenkins, James Leming, Walter B. MacDonald, Ina V.S. Mullis, Mary Jane Turner, and Judith S. Wooster, National Assessment of Educational Progress, Educational Testing Service, 1990.

The Writing Report Card, 1984-88, Arthur N. Applebee, Lynn B. Jenkins, Judith A. Langer, and Ina V.S. Mullis, National Assessment of Educational Progress, Educational Testing Service, 1990.

Dropout Rates in the United States: 1988, National Center for Education Statistics, U.S. Department of Education, 1989.

Digest of Education Statistics, 1990, National Center for Education Statistics, U.S. Department of Education, 1990.

The Condition of Education, 1990, National Center for Education Statistics, U.S. Department of Education, 1990.

Statistics for 1988 on television watching are from unpublished data from the National Assessment of Educational Progress.

PROGRESS TOWARD EQUALITY

All sources used for this section are cited in the previous section, Progress Toward Excellence.